

CLAIMS

1. A low capacitance measurement probe comprising:
 - an outer conductor forming an outer wall having an exterior and an interior;
 - a non-conductive spacer forming a first wall having an exterior and an interior, said non-conductive spacer coupled to said interior of said outer conductor;
 - a conductive layer forming a second wall having an exterior and an interior, said conductive layer coupled to said interior of said first wall;
 - an insulating layer forming a third wall having an exterior and an interior, said insulating layer coupled to said interior of said second wall; and
 - an inner conductor forming an inner wall having an exterior and an interior, said inner conductor coupled to said interior of said third wall.
2. The low capacitance measurement probe of Claim 1, wherein an electrical circuit is created when said outer conductor and said inner conductor electrically communicate responsive to contact with tissue.
3. The low capacitance measurement probe of Claim 1, further comprising wires coupled to said outer conductor, said conductive layer, and said inner conductor.

4. The low capacitance measurement probe of Claim 1, wherein the low capacitance measurement probe has a probe end and a control end.

5. The low capacitance measurement probe of Claim 4, further comprising a handle coupled to said control end.

6. The low capacitance measurement probe of Claim 4, further comprising:

control electronics configured to send electrical signals to the low capacitance measurement probe and configured to receive measurements for indication on a display, said control electronics disposed in said handle.

7. The low capacitance measurement probe of Claim 6, further comprising:

a user interface coupled to said control electronics.

8. The low capacitance measurement probe of Claim 1, further comprising:

a control electronics module configured to send electrical signals to the low capacitance measurement probe and configured to receive measurements for indication on a display.

9. The low capacitance measurement probe of Claim 8, further comprising:

a user interface coupled to said control electronics.

10. The low capacitance measurement probe of Claim 1, wherein said outer conductor, said inner conductor, and said conductive layer are comprised of a material selected from the group consisting of stainless steel, platinum, gold, silver, copper, and conductive plastic.

11. The low capacitance measurement probe of Claim 1, wherein said non-conductive spacer and said insulating layer are selected from the group consisting of polyethylene, polyurethane, polytetrafluoroethylene, polyimide, parylene, glass, epoxy, ceramic, and silicone.

12. A low capacitance measurement probe system comprising:

a low capacitance measurement probe comprising:

an outer conductor forming an outer wall having an exterior and an interior;

a non-conductive spacer forming a first wall having an exterior and an interior, said non-conductive spacer coupled to said interior of said outer conductor;

a conductive layer forming a second wall having an exterior and an interior, said conductive layer coupled to said interior of said first wall;

an insulating layer forming a third wall having an exterior and an interior, said insulating layer coupled to said interior of said second wall;

and

an inner conductor forming an inner wall having an exterior and an interior, said inner conductor coupled to said interior of said third wall; and

control electronics electrically coupled to said low capacitance measurement probe, said control electronics having a display.

13. The system of Claim 12, wherein an electrical circuit is created when said outer conductor and said inner conductor electrically communicate responsive to contact with tissue.

14. The system of Claim 12, further comprising wires coupled to said outer conductor, said conductive layer, and said inner conductor.

15. The system of Claim 12, wherein said low capacitance measurement probe has a probe end and a control end.

16. The system of Claim 15, further comprising a handle coupled to said control end.

17. The system of Claim 16, wherein said control electronics are disposed in said handle.

18. The system of Claim 12, wherein said low capacitance measurement probe is configured to send electrical signals to said control electronics.

19. The system of Claim 12, wherein said control electronics are disposed in a module.

20. The system of Claim 12, wherein said control electronics is configured to receive measurements and configured to indicate said measurements on said display.

21. The system of Claim 12, wherein said outer conductor, said inner conductor, and said conductive layer are comprised of a material selected from the

group consisting of stainless steel, platinum, gold, silver, copper, and conductive plastic.

22. The system of Claim 12, wherein said non-conductive spacer and said insulating layer are selected from the group consisting of polyethylene, polyurethane, polytetrafluoroethylene, polyimide, parylene, glass, ceramic, epoxy, and silicone.

23. The system of Claim 12, further comprising:
a user interface coupled to said control electronics.

24. A method for collecting measurements using a low capacitance measurement probe system, the method comprising:
disposing a low capacitance measurement probe in a designated area;
directing an electrical current to said low capacitance measurement probe from control electronics;
measuring electrical impedance between an inner conductor and an outer conductor of said low capacitance measurement probe to collect a first measurement; and
directing said first measurement to said control electronics.

25. The method of Claim 24, wherein said designated area is human tissue.

26. The method of Claim 24, wherein said low capacitance measurement probe comprises:

 said outer conductor forming an outer wall having an exterior and an interior;

 a non-conductive spacer forming a first wall having an exterior and an interior, said non-conductive spacer coupled to said interior of said outer conductor;

 a conductive layer forming a second wall having an exterior and an interior, said conductive layer coupled to said interior of said first wall;

 an insulating layer forming a third wall having an exterior and an interior, said insulating layer coupled to said interior of said second wall; and

 said inner conductor forming an inner wall having an exterior and an interior, said inner conductor coupled to said interior of said third wall.